

REMARKS

Status of the Claims

Claims 2-8, 10-17 and 19-28 are pending in the present application. Applicants consider that claim 24 is duplicative of claim 2. However, it is not clear that the Examiner is interpreting claim 2 in the same manner as Applicants intend. Support for claims 22-27 includes claims 2, 4 and 20 and paragraphs [13], [19], [25] and [29] of the specification. Claim 28 is supported by claims 2, 23 and 25.

Rejection of Claims 2, 3, 5-8, 10-12, 14-17, 19 and 21 under 35 U.S.C. 103(a)

Claim 2, 3, 5-8, 10-12, 14-17, 19 and 21 are rejected by the Examiner under 35 U.S.C. 103(a) over Kallenback et al in view of Hater for the reasons set forth in paragraph 2 of the Office Action. This rejection is respectfully traversed. Reconsideration and withdrawal thereof are requested.

The Present Invention

The present invention as recited in claim 2 relates to a hydrocarbon bioremediation system for removing hydrocarbons from a body of water, comprising:

- (a) a floater formed of a porous polymeric foam and adapted to float in or on the surface of the body of water, and
- (b) microbes **within** the floater, adapted to digest the hydrocarbons.

This embodiment does not exclude microbes located on the surface of the floater. However, this embodiment requires that the microbes must be anywhere **within** the floater (i.e. other than on the surface).

The present invention as recited in claim 24 relates to a hydrocarbon bioremediation system for removing hydrocarbons from a body of water, comprising:

(a) a floater formed of a porous polymeric foam and adapted to float in or on the surface of the body of water, and

(b) microbes located at least **within** the floater, adapted to digest the hydrocarbons. As with claim 2, this embodiment does not exclude microbes on the surface of the floater. However, this embodiment requires that the microbes be located anywhere **within** the floater (i.e. other than on the surface).

The present invention as recited in claim 11 relates to a method for removing hydrocarbons from a body of water, comprising:

(a) placing microbes, adapted to digest hydrocarbons, **into** a floater formed of a porous polymeric foam and adapted to float in or on the surface of the body of water,

(b) placing the floater containing the microbes into a body of water containing hydrocarbons,

(c) allowing the hydrocarbons to **penetrate** the floater and to contact the microbes, and

(d) allowing the microbes **within** the floater to digest the hydrocarbons. This embodiment does not exclude microbes on the surface of the floater. However, this embodiment requires that the microbes be anywhere **within** the floater. Note that the use of the language “into,”

“penetrate” and “within” in paragraphs (a), (c) and (d) refers to activity other than on the surface of the floater.

The present invention as recited in claim 28 relates to a hydrocarbon bioremediation system for removing hydrocarbons from a body of water, comprising:

(a) a floater formed of a porous polymeric foam and adapted to float in or on the surface of the body of water, and

(b) microbes within the floater, adapted to digest the hydrocarbons, wherein the floater has an opening, and the microbes are located in at least the opening in the floater, and wherein the microbes are in the form of a tablet, powder or liquid. As with claim 2, this embodiment does not exclude microbes on the surface of the floater. However, this embodiment requires that the microbes be located anywhere **within** the floater (i.e. other than on the surface).

Finally, claim 28 is very similar to allowed claim 4, except that the microbes are not limited to a pellet, but rather, the microbes are in the form of a tablet, powder or liquid.

Kallenbach et al.

Kallenbach et al. expressly teaches away from the present invention. For example, see col. 6, lines 1, lines 21-27, which teaches that “none of the treating material 2 is introduced into the innermost portion of the foam.” Thus, the only surface designed for microbial growth is on the outer surface of the Kallenbach et al. invention.

Kallenbach et al. discloses fragments of a treating material 2 located on the **outer** region of the medium. Indeed, Kallenbach expressly **teaches away** from fragments **within** the core.

See col. 4, lines 23-33. The treating material 2, located only on the outer regions, has properties beneficial for supporting growth of microorganisms. Accordingly, it is clear that Kallenbach localizes microorganisms at the **surface** of the medium. See col. 4, lines 64-66.

As best shown in the FIGURE, the medium 1 includes a core of polymeric foam 3 and an outer region of a combination of a plurality of fragments of a treating material 2 and more polymeric foam 3. The treating material 2 includes fragments whose outer surface adheres to an outer surface of the polymeric foam 3 in the outer region, fragments of treating material 2 that are partially embedded in the foam 3 of the outer region, and fragments of treating material 2 wholly embedded in the foam 3 of the outer region. Preferably, no fragments are contained within the core, i.e., the core contains only foam and other suitable additives.

Hater

The Hater reference relates to the following:

The system and device of the present invention consists of a package or sock which is fabricated from a porous material, and which is filled with dried bacterial cultures or microorganisms which are suitable for degrading waste. In use, the sock is immersed in a waste stream and as sewage flows through the porous sock the dried bacteria are wetted and released into the stream to act on sewage, oil, grease, H₂S, and other organics present in a typical municipal collection system. In addition to the bacterial culture, the sock may optionally also contain additive materials which function to stimulate growth of the bacteria and enzyme production. The sock may also be enclosed in a protective outer casing which is provided with openings to allow the waste stream to directly contact the sock. Alternatively the device may comprise a solid enclosed outer casing which contains the cultures. In this embodiment the casing would contain one or more openings to allow the bacteria to be released into the waste stream. [See Summary]

Distinctions Between the Present Invention and the Cited Prior Art

Kallenbach et al. discloses fragments of a treating material 2 located on the **outer** region of the medium. Indeed, Kallenbach expressly teaches away from fragments **within** the core. See col. 4, lines 23-33. Preferably, the treating material 2 located only on the outer regions has properties beneficial for supporting growth of microorganisms. See col. 4, lines 64-66 and col. 6,

lines 1, lines 21-27. Accordingly, it is clear that Kallenbach teaches away from the present invention and localizes microorganisms at the surface of the medium, contrary to the present invention.

The Hater reference does not correct the deficiencies of the primary Kallenbach reference. That is, there is no teaching or suggestion of a hydrocarbon bioremediation system or method for removing hydrocarbons from a body of water as claimed. Indeed, combining teachings of the references in the manner suggested by the Examiner would destroy the teachings of the Kallenbach reference.

None of the references relied upon by the Examiner disclose the claimed floater having the microorganisms placed within the floater [i.e. inside; not only on the surface]. Although Applicants' invention does not exclude the presence of the microorganism on the surface of the floater [e.g. see claims 20 and 26], Applicants require microorganisms to be present within the floater.

Note that paragraph [13] of the specification teaches that "microbes are placed in a floating carrier." One type of such "placing" includes "pellets held in slits in the foam." Another preferred embodiment is disclosed in paragraph [19] where "the tablet or pellet may be held in any opening or bore that is shaped to hold the tablet." Of course, this encompasses multiple openings or bores, if desired. Note that the microbes may be in the form of a powder or liquid rather than simply a pellet. See paragraph [29]. And paragraph [31] discusses distributing microbes throughout the floater.

In summary, the prior art does not teach "microbes [located] within the floater," contrary to the position taken by the Examiner. This is especially true since the prior art expressly teaches

away from locating microbes within the floater. The Examiner's position to the contrary is a hindsight reconstruction of the prior art in view of Applicants' own disclosure.

Reconsideration and withdrawal of the rejection is respectfully requested.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

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Respectfully submitted,

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